

WHAT IS CLAIMED IS:

- 1 1. A method of treating a retroviral infection by a retrovirus selected from the group
2 consisting of HIV, HCMV, and HHV in an afflicted host which comprises administering to the
3 host a therapeutically effective amount of a compound represented by the following formula:



or a pharmaceutically acceptable acid-addition or base-addition salt thereof;

4 wherein:

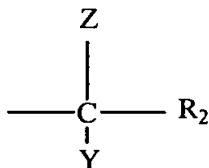
5 component A is a substituted or unsubstituted aryl functional group, substituted or
6 unsubstituted piperidyl, substituted or unsubstituted thiophenyl;

7 component L is sulfonyl, sulfinyl or thio; and,

8 component B is a substituted or unsubstituted aromatic nitrogen containing heteroaryl
9 functional group.

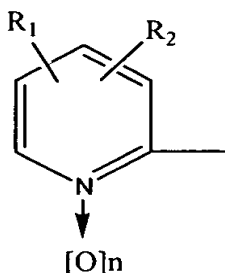
- 1 2. The method of claim 1 wherein the retroviral infection being treated is
2 an infection by a retrovirus selected from the group consisting of HIV-1, HIV-2, and HHV-6.

- 1 3. The method of claim 1 wherein the substituted or unsubstituted aryl functional
2 group component A is a functional group of the following formula:



3 wherein Z is H, Cl, cyano, alkyl having from 1 to 15 carbon atoms, alkoxyalkyl having 2 or 3
 4 carbon atoms; Y is H or a double bond to a carbon which is attached to R; and R is phenyl,
 5 biphenyl, benzyl, polycycloaryl, heteroaryl or phenyl substituted with 1 to 5 substituents which
 6 may be the same or different, the substituents being selected from the group consisting of lower
 7 alkyl having from 1 to 5 carbon atoms, halogen, nitro, methoxy, ethoxy, benzyloxy,
 8 methylenedioxy, 2,2-dichlorocyclopropyl, trifluoromethyl, methylsulfonyl, cyano and phenoxy.

1 4. The method of claim 1 wherein the substituted or unsubstituted aromatic nitrogen
 2 containing heteroaryl functional group component B is 4-methylquinolyl, 8-ethyl-4-
 3 methylquinolyl or a functional group of the following formula:



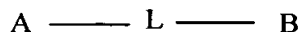
5 wherein n is 0 or 1, R₁ and R₂ may be the same or different and are H, halogen, lower alkyl
 6 having from 1 to 4 carbon atoms, hydroxy, or nitro.

1 5. The method of claim 1 wherein the compound is selected from
 2 the group consisting of 2-(phenylmethylsulfonyl) pyridine-N-oxide, 2-[1-(2,5-
 3 dimethylphenyl)octylsulfonyl] pyridine-N-oxide, 2-[(2,5-dimethylphenyl)methylsulfonyl]
 4 pyridine-N-oxide, 2-[[1-(2,5-dimethylphenyl)ethyl]sulfonyl]-3-methylpyridine-N-oxide, 2-[[1-
 5 (2,5-dimethylphenyl)chloromethyl]sulfonyl]-4-methylpyridine-N-oxide, 2-[1-(2,5-
 6 dimethylphenyl)chloromethyl]sulfonyl pyridine, 2-[1-(2,5-dimethylphenyl)methylthio]-3-

chloropyridine-N-oxide, 2-[phenylmethyl]thio-3-hydroxypyridine, 2-[(2,5-dimethylphenyl)methylthio] pyridine, 2-[(2,3,4,5,6-pentachlorophenyl)methylsulfonyl] pyridine N-oxide, 2-[1-(phenylethyl)sulfonyl]-8-ethyl-4-methylquinoline, 2-[(3,4-dichlorophenyl)methylsulfonyl] pyridine-N-oxide, 2-[(4-(2,2-dichlorocyclopropyl)phenyl)methylsulfonyl] pyridine-N-oxide, 2-[(2,4,6-trimethylphenyl)methylsulfinyl] pyridine-N-oxide, 2-[(3-nitro-4-chlorophenyl)methylsulfonyl] pyridine-N-oxide, 2-[phenylmethylsulfinyl] pyridine-N-oxide, 2-[[1-(2,5-dimethylphenyl)propyl]sulfonyl]-3-methylpyridine-N-oxide, 2-[(9-anthryl)methylsulfonyl] pyridine-N-oxide, 2-[4-((1,1dimethyl)propyl) phenyl)methylsulfonyl] pyridine-N-oxide, 2-[1-(2,5-dimethylphenyl)ethylthio]-4-methylquinoline, 2-[[[(2,5dimethylphenyl)methyl]sulfonyl]-3-methylpyridine-N-oxide and pharmaceutically acceptable acid-addition and base-addition salts thereof.

6. The method of claim 1 wherein the compound is contained in a composition containing a pharmaceutically acceptable carrier.

7. A method of inhibiting the replication of a retrovirus selected from the group consisting HIV, HCMV, and HHV; the method comprising contacting the retrovirus with an effective amount a compound represented by the following formula:



or a pharmaceutically acceptable acid-addition or base-addition salt thereof;

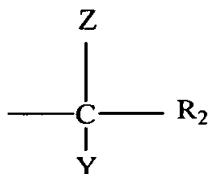
wherein:

component A is a substituted or unsubstituted aryl functional group, substituted or unsubstituted piperidyl, substituted or unsubstituted thiophenyl;

7 component L is sulfonyl, sulfinyl or thio; and,
8 component B is a substituted or unsubstituted aromatic nitrogen containing heteroaryl
9 functional group.

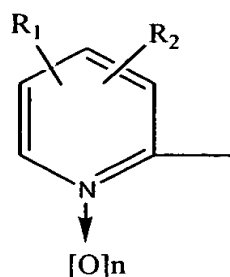
1 8. The method of claim 7 wherein the retrovirus whose replication is being inhibited
2 is a retrovirus selected from the group consisting of HIV-1, HIV-2, and HHV-6.

1 9. The method of claim 7 wherein the substituted or unsubstituted
2 aryl functional group of component A is a functional group of the following formula:



3 wherein Z is H, Cl, cyano, alkyl having from 1 to 15 carbon atoms, alkoxyalkyl having 2 or 3
4 carbon atoms; Y is H or a double bond to a carbon which is attached to R; and R is phenyl,
5 biphenyl, benzyl, polycycloaryl, heteroaryl or phenyl substituted with 1 to 5 substituents which
6 may be the same or different, the substituents being selected from the group consisting of lower
7 alkyl having from 1 to 5 carbon atoms, halogen, nitro, methoxy, ethoxy, benzyloxy,
8 methylenedioxy, 2,2-dichlorocyclopropyl, trifluoromethyl, methylsulfonyl, cyano and phenoxy.

1 10. The method of claim 7 wherein the substituted or unsubstituted aromatic nitrogen
2 containing heteroaryl functional group component B is 4-methylquinolyl, 8-ethyl-4-
3 methylquinolyl or a functional group of the following formula:



wherein n is 0 or 1, R_1 and R_2 may be the same or different and are H, halogen, lower alkyl having from 1 to 4 carbon atoms, hydroxy, or nitro.

11. The method of claim 7 wherein the compound is selected from the group consisting of 2-(phenylmethylsulfonyl) pyridine-N-oxide, 2-[1-(2,5-dimethylphenyl)octylsulfonyl] pyridine-N-oxide, 2-[(2,5-dimethylphenyl)methylsulfonyl] pyridine-N-oxide, 2-[[1-(2,5-dimethylphenyl)ethyl]sulfonyl]-3-methylpyridine-N-oxide, 2-[[1-(2,5-dimethylphenyl)chloromethyl]sulfonyl]-4-methylpyridine-N-oxide, 2-[1-(2,5-dimethylphenyl)chloromethyl]sulfonyl pyridine, 2-[1-(2,5-dimethylphenyl)methylthio]-3-chloropyridine-N-oxide, 2-[phenylmethyl]thio-3-hydroxypyridine, 2-[(2,5-dimethylphenyl)methylthio] pyridine, 2-[(2,3,4,5,6-pentachlorophenyl)methylsulfonyl] pyridine N-oxide, 2[1-(phenylethyl)sulfonyl]-8-ethyl-4-methylquinoline, 2-[(3,4-dichlorophenyl)methylsulfonyl] pyridine-N-oxide, 2-[(4-(2,2-dichlorocyclopropyl)phenyl)methylsulfonyl] pyridine-N-oxide, 2-[(2,4,6-trimethylphenyl)methylsulfonyl] pyridine-N-oxide, 2-[(3-nitro-4-chlorophenyl)methylsulfonyl] pyridine-N-oxide, 2-[phenylmethylsulfonyl] pyridine-N-oxide, 2-[[1-(2,5-dimethylphenyl)propyl]sulfonyl]-3-methylpyridine-N-oxide, 2-[(9-anthryl)methylsulfonyl] pyridine-N-oxide, 2-[4-((1,1dimethyl)propyl) phenyl)methylsulfonyl] pyridine-N-oxide, 2-[1-(2,5-dimethylphenyl)ethylthio]-4-methylquinoline, 2-[[1-(2,5dimethylphenyl)

16 methyl)sulfonyl]-3-methylpyridine-N-oxide and pharmaceutically acceptable acid-addition and
17 base-addition salts thereof.

1 12. The method of claim 7 wherein the compound is contained in a composition
2 containing a pharmaceutically acceptable carrier.

1 13. A pharmaceutical composition useful for treating a retroviral infection by a
2 retrovirus selected from the group consisting of HIV, HCMV and HHV, in an
3 afflicted host, comprising a therapeutically effective amount of the following compound:
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6 or a pharmaceutically acceptable acid-addition and base-addition salt thereof;
7 wherein:

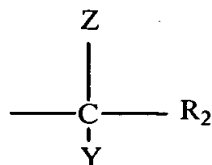
8 component A is a substituted or unsubstituted aryl functional group, substituted or
9 unsubstituted piperidyl, or substituted or unsubstituted thiopheneyl;

10 component L is sulfonyl, sulfinyl or thio; and,

11 component B is a substituted or unsubstituted aromatic nitrogen containing heteroaryl
12 functional group; and

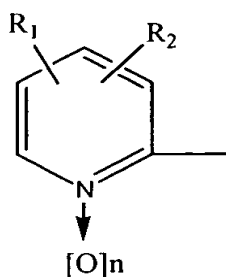
13 a pharmaceutically acceptable carrier

1 14. The composition of claim 13 wherein the substituted or unsubstituted
2 aryl functional group component A is of the following formula:



wherein Z is H, Cl, cyano, alkyl having from 1 to 15 carbon atoms, alkoxyalkyl having 2 or 3 carbon atoms; Y is H or a double bond to a carbon which is attached to R; and R is phenyl, biphenyl, benzyl, polycycloaryl, heteroaryl or phenyl substituted with 1 to 5 substituents which may be the same or different, the substituents being selected from the group consisting of lower alkyl having from 1 to 5 carbon atoms, halogen, nitro, methoxy, ethoxy, benzyloxy, methylenedioxy, 2,2-dichlorocyclopropyl, trifluoromethyl, methylsulfonyl, cyano and phenoxy.

15. The composition of claim 13 wherein the substituted or unsubstituted aromatic nitrogen containing heteroaryl functional group component B is 4-methylquinolyl, 8-ethyl-4-methylquinolyl or a structure of the following formula:



wherein n is 0 or 1, R₁ and R₂ may be the same or different and are H, halogen, lower alkyl having from 1 to 4 carbon atoms, hydroxy, or nitro.

16. The composition of claim 13 wherein the compound is selected from the group consisting of 2-(phenylmethylsulfonyl) pyridine-N-oxide, 2-[1-(2,5-dimethylphenyl) octylsulfonyl] pyridine-N-oxide, 2-[(2,5-dimethylphenyl)methylsulfonyl] pyridine-N-oxide, 2-[[1-(2,5-dimethylphenyl)ethyl]sulfonyl]-3-methylpyridine-N-oxide, 2-[[1-(2,5-dimethylphenyl)chloromethyl]sulfonyl]-4-methylpyridine-N-oxide, 2-[1-(2,5-

6 dimethylphenyl)chloromethyl)sulfonyl] pyridine, 2-[1-(2,5-dimethylphenyl)methylthio]-3-
7 chloropyridine-N-oxide, 2-[phenylmethyl]thio-3-hydroxypyridine, 2-[(2,5-dimethylphenyl)
8 methylthio] pyridine, 2-[(2,3,4,5,6-pentachlorophenyl)methylsulfonyl] pyridine N-oxide, 2[1-
9 (phenylethyl)sulfonyl]-8-ethyl-4-methylquinoline, 2-[(3,4-dichlorophenyl)methylsulfonyl]
10 pyridine-N-oxide, 2-[(4-(2,2-dichlorocyclopropyl)phenyl)methylsulfonyl] pyridine-N-oxide, 2-
11 [(2,4,6-trimethylphenyl)methylsulfinyl] pyridine-N-oxide, 2-[(3-nitro-4-chlorophenyl)
12 methylsulfonyl] pyridine-N-oxide, 2-[phenylmethylsulfinyl] pyridine-N-oxide, 2-[[1-(2,5-
13 dimethylphenyl)propyl)sulfonyl]-3-methylpyridine-N-oxide, 2-[(9-anthryl)methylsulfonyl]
14 pyridine-N-oxide, 2-[4-((1,1 dimethyl)propyl) phenyl)methylsulfonyl] pyridine-N-oxide, 2-[1-
15 (2,5-dimethylphenyl)ethylthio]-4-methylquinoline, 2-[[2,5dimethylphenyl)methyl]sulfonyl]-3-
16 methylpyridine-N-oxide and pharmaceutically acceptable acid-addition and base-addition salts
17 thereof.

1 17. A method of treating an HIV infection in an afflicted host which comprises
2 administering to the host a therapeutically effective amount of a compound selected from the
3 group consisting of 2-[[1-(2,5-dimethylphenyl)ethyl]sulfonyl]-3-methylpyridine-N-oxide, 2-[[1-
4 (2,5-dimethylphenyl)chloromethyl]sulfonyl]-4-methylpyridine-N-oxide, 2-[1-(2,5-
5 dimethylphenyl)chloromethyl)sulfonyl] pyridine, 2-[1-(2,5-dimethylphenyl)methylthio]-3-
6 chloropyridine-N-oxide, 2-[phenylmethyl]thio-3-hydroxypyridine, 2-[(2,3,4,5,6-
7 pentachlorophenyl) methylsulfonyl] pyridine N-oxide, 2[1-(phenylethyl)sulfonyl]-8-ethyl-4-
8 methylquinoline, 2-[(3,4-dichlorophenyl)methylsulfonyl] pyridine-N-oxide, 2-[(4-(2,2-
9 dichlorocyclopropyl)phenyl)methylsulfonyl] pyridine-N-oxide, 2-[(2,4,6-trimethylphenyl)
10 methylsulfinyl] pyridine-N-oxide, 2-[(3-nitro-4-chlorophenyl)methylsulfonyl] pyridine-N-oxide,
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11 ^{ex 4 comp 66} 2-[phenylmethylsulfinyl] pyridine-N-oxide, 2-[[(2,5dimethylphenyl)methyl]sulfonyl]-3-
12 methylpyridine-N-oxide and pharmaceutically acceptable acid-addition and base-addition salts
13 thereof.

1 18. A method of treating an HCMV infection in an afflicted host which comprises
2 administering to the host a therapeutically effective amount of a compound selected from the
3 group consisting of 2-[(2,5-dimethylphenyl)methylthio] pyridine, 2-[1-(2,5-
4 ^{ex 1 comp 70} dimethylphenyl)octylsulfonyl] pyridine-N-oxide, 2-[[1-(2,5-dimethylphenyl)propyl]sulfonyl]-3-
5 methylpyridine-N-oxide, 2-[(9-anthryl)methylsulfonyl] pyridine-N-oxide, 2-[4-
6 ((1,1dimethyl)propyl) phenyl)methylsulfonyl] pyridine-N-oxide, 2-[1-(2,5-
7 dimethylphenyl)ethylthio]-4-methylquinoline and pharmaceutically acceptable acid-addition and
8 base-addition salts thereof.

1 19. A method of treating an HHV-6 infection in an afflicted host which comprises
2 administering to the host a therapeutically effective amount of a compound selected from the
3 ^{ex 3 comp 10} group consisting of 2-[(2,5-dimethylphenyl)methylsulfonyl] pyridine-N-oxide, and 2-
4 (phenylmethylsulfonyl) pyridine-N-oxide and pharmaceutically acceptable acid-addition and
5 base-addition salts thereof.